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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/404,245 09/22/99 HARRIS

F 8675-5

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IM22/0214

EXAMINER

BEFUMO, J

ART UNIT

PAPER NUMBER

1771

DATE MAILED:

02/14/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No. 09/404,245	Applicant(s) HARRIS ET AL.	
	Examiner Jenna-Leigh Befumo	Art Unit 1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-62 is/are pending in the application.
- 4a) Of the above claim(s) 1-16,34-47 and 60-62 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-33 and 48-59 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4,5,6.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1 – 16, 34 – 47, and 60 – 62, drawn to methods to make a fiber and fabrics therefrom, classified in class 264, subclass various.
 - II. Claims 17 – 33 and 48 – 59, drawn to a splittable conjugate fiber and products therefrom, classified in class 428, subclass 373.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the fiber bundle and fabric can be made from a conjugate fiber with a third component that is dissolved to produce a two component fiber bundle.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Melissa Pendleton on December 14, 2000 a provisional election was made with traverse to prosecute the invention of Group II, claims 17 – 33 and 48 – 49. Affirmation of this election must be made by applicant in replying to this Office

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action. Claims 1 – 16, 34 – 47, and 60 – 62 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 17 – 33 and 48 – 59 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 17 recites the limitation "said microfilaments" in line 3. There is insufficient antecedent basis for this limitation in the claim. Does the term "microfilament" refer to the aliphatic polyester microfilaments, aromatic polyester microfilaments, or both types of microfilaments? Claims 23, 24, 28, and 30 are similarly rejected. Claims 18 – 22, 25 – 27, 29, and 31 – 33 are rejected because of their dependency.

9. The term "comprises about 8 to 48 microfilaments" in claim 24 is indefinite. Does the fiber bundle contain "8 to 48" of each type of aliphatic polyester and aromatic polyester microfilament per bundle or is the total number of both microfilaments equal to "8 to 48"?

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10. The term "a yarn comprising the fiber bundle" in claims 26 and 29 is indefinite. How is a "yarn" different from a "fiber bundle"? What is done to a "fiber bundle" to make it a "yarn" instead of a "fiber bundle"? Claim 27 is rejected because of its dependency.

11. Claim 32 is indefinite. The claims a product comprising the fabric of claim 29.

However, claim 29 describes a yarn and not a fabric.

12. The terms "pie/wedge fibers" and "segmented round fibers" in claim 56 is indefinite. How is a "pie/wedge fiber" different from a "segmented round fiber"? Wouldn't a "pie/wedge fiber" be a type of "segmented round fiber"?

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claims 17 – 26, 28 – 33, and 59 are rejected under 35 U.S.C. 102(b) as being anticipated by Makimura et al. (4,663,221).

Makimura et al. disclose a conjugate fiber comprising an elastomeric component, A, and an inelastic component, B (abstract). The fiber is split to form a fiber bundle comprising elastomeric core with inelastic fibers surrounding the core (abstract). Makimura et al. teach that the preferred elastomeric component is polyurethane (column 3, lines 54 – 56). And the inelastic material can be spinnable polymers, such as polyesters, polyamides, and polyolefins, specifically polypropylene (column 4, lines 4 – 13). The limitation that the multi-components be split from

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one another by thermal activation due to their sufficiently different solubility parameters is a process limitation that fails to add any structural limitations to the fiber bundle claimed.

Therefore the limitation that the fiber bundle is originated from a multicomponent fiber having components with substantially different solubilities split upon thermal activation does not add patentable weight to claim 17, or claims 28, 30, and 59. Also, since Makimura et al. disclose using similar components, as the elastic and inelastic component taught by Applicant, the solubility parameters will inherently be substantially different and at least 1.2 and $2.9 \text{ (J/cm}^3\text{)}^{1/2}$ as claimed by Applicant. Thus claims 17 – 19, 22 and 28 are anticipated by Makimura et al.

Also Makimura et al. teach that after the fiber is split into two components the elastic component is a taut condition while the inelastic fibers are in a slack condition shown in Figure 4 (column 5, lines 33 – 38). The taut elastic component will be substantially non-bulked while the slack non-elastomeric components will be bulked. Therefore claims 20 and 21 are anticipated by Makimura et al.

Additionally, Makimura et al. teach that the fibers can be crimped, cut and spun into yarns as necessary (column 5, lines 7 – 10). The inelastic components have a size of less than 0.15 denier and the elastic components have a size of 0.15 – 10 denier (column 5, lines 15 – 30). The fiber bundle comprises numerous filaments as shown in Figures 3 and 4. Figure 3 has 9 filaments and Figure 4 has 19. Thus, claims 23 – 26 and 29 are anticipated by Makimura et al.

Makimura et al. teach the conjugate fiber can be used to make woven or knit fabric (column 2, line 59) or non-woven fabric as shown in Examples 1 – 5. The fabric would inherently comprise a plurality of elastomeric and inelastic filaments which are bulked since they are made from the fiber bundle described above. Additionally, Makimura et al. disclose that the

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elastomeric material should have an elastic recovery of no less than 90% (column 4, lines 36 – 38). Claims 32 and 33 are rejected by Makimura et al. since there is no structural limitation recited besides a fabric. The terms, “synthetic suede” and “filtration media”, describe intended uses for the fabric and do not add further structural definition to the claimed fabric. Hence, claims 32 and 33 are not patentably distinct from the non-woven fabric of Makimura et al. Thus claims 30 – 33 and 59 are anticipated.

Claim Rejections - 35 USC § 102/103

15. Claims 48 – 58 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Makimura et al. in view of Sasse et al. (5,895,710).

The features of Makimura et al. have been set forth above. The conjugate fiber is made from elastic components, such as polyurethane, and inelastic components, such as polypropylene either in continuous or staple form. The amount of the elastomeric component in the fiber is preferably 20 – 80% by weight (column 4, lines 57 – 60).

However, Makimura et al. fails to teach a splittable conjugate fiber due to a difference in the solubility parameters. Since, Makimura et al. uses the same components as Applicant to make a splittable conjugate fiber, Makimura et al. would inherently have the recited difference in solubility parameters. The polyurethane and propylene components are used by both Applicant and Makimura et al. to make an fiber bundle with an elastic core surrounded by an inelastic sheath.

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Alternatively, Sasse et al. is drawn to a splittable conjugate fiber. Sasse et al. teach making splittable conjugate fibers can be that have incompatible adjacent segments (column 1, lines 58 – 65). The term incompatible is defined as being immiscible by Sasse et al. (column 7, lines 9 – 12). The difference in the solubility parameter is used to measure the incompatibility of the adjacent sections (column 7, lines 20 – 25). The difference should be at least 1, and more desirably 2 (cal/cm³)^{1/2} (column 5, lines 22 – 23). Additionally, Sasse et al. suggest that copolymers of polyurethane (column 5, lines 36) and polypropylene (column 5, lines 45 – 50) can be used as components in the conjugate fiber. It would have been obvious to one having ordinary skill to produce a conjugate fiber with elastic and inelastic segments that are splittable due to the segments incompatibility, determined by the solubility parameters as taught by Sasse et al. The material taught by Makimura et al. is suggested as possible polymeric material used in the incompatible segments taught by Sasse et al. [Also, based on Sasse et al. teachings it would be a matter of routine skill in the art to determine the solubility parameters were different or modify the surface characteristics to produce incompatible fibers. This would produce a two component fiber instead of a three component fiber wherein the third component is dissolved to form two separate components. The process would be more economical and efficient since it would require less materials and produce less waste.] too much

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Makimura et al.

The features of Makimura et al. have been disclosed above. However, Makimura et al fails to teach dyeing the multi-component fiber. It would have been an obvious matter of design choice to dye the different components different color. Since the components are made of different types of polymers they would need to be dyed by different means to produce the same color fiber. Therefore, it would be obvious to one having ordinary skill in the art to dye the fiber different shades of the same color so that the fiber can be dyed in one process. Or since the fibers are dyed with different dyes it would have been obvious to one having ordinary skill in the art to dye the components different colors to produce a different aesthetic result or so the color can be used to indicate the amount of tension applied to the fiber or fabric.

18. Claim 56 is rejected under 35 U.S.C. 103(a) as being unpatentable over Makimura et al. as applied to claim 48 above, and further in view of Gillespie et al (5,783,503).

The features of Makimura et al. and Sasse et al. have been set forth above. Makimura et al fails to teach the producing a pie/wedge conjugate fiber. Gillespie et al. is drawn to a splittable conjugate fiber. Gillespie et al. teach in Figures 1 and 2 configurations for splittable conjugate fibers, both of which are pie/wedge configurations. Therefore, it would have been obvious to one having ordinary skill in the art to produce the Makimura et al. conjugate fiber in a pie wedge configuration because it is well known in the art and produces fibers that readily split.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jenna-Leigh Befumo whose telephone number is (703) 605-1170. The examiner can normally be reached on Monday - Friday (8:00am - 4:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (703) 308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3599 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Jenna-Leigh Befumo
February 12, 2001



CHERYL JUSKA
PATENT EXAMINER